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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GIRARDI, VANESSA MARY	

ART UNIT	PAPER NUMBER
2833	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,530	BLACKBORN, WILLEM	
	Examiner	Art Unit	
	Vanessa Girardi	2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *January 13, 2006 (Initial Application)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 15-21* is/are rejected.

7)☒ Claim(s) *13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *13 Jan 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment/Remarks

Examiner acknowledges preliminary amendment filed on January 13, 2006 which changes the title of the instant invention to; HF CONNECTOR FOR CONNECTING A COAXIAL PLUG CONNECTOR TO AN HF TRANSMISSION LINE ON A CIRCUIT BOARD.

Examiner's Amendment

Examiner initiated interview took place on March 26, 2007 with Mr. Allan M. Lowe. The objective was to more clearly organize the grammar of the limitations contained within claims 6 and 8 with respect to "*spring blades of a pair*". At the time of the interview it was believed the instant invention was in a condition for allowance; however upon further consideration the instant invention is believed to be unpatentable over the references stated in the following DETAILED ACTION.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1 and 2 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nagata (US 6,595,804).

With respect to claim 1; Nagata shows a connector for connecting a plug connector to a transmission line on a circuit board, the connector comprising:

at least a first pair of spring blades (21, 22) arranged and designed for electrically contacting a central conductor (AT 61 AND 62) of the coaxial plug connector (P), and at least a second pair of spring blades (26, 25) arranged and designed for electrically contacting an outer

conductor (AT 65 AND 66) of the coaxial plug connector (P), at least one of the spring blades of the first pair (21, 22) has, on an end facing away from the coaxial plug connector (P), a contact surface (21b, 22b), and at least one spring blade of the second pair (26, 25) has, on an end facing away from the coaxial plug connector (P), a contact surface (26b, 25b).

However Nagata relies on that which is well-known in the art regarding the soldering terminals (21b, 22b) and (26b, 25b) of the spring blades (21, 22) and (26, 25) and their role with respect to electrical and mechanical connection to a circuit board.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply well known surface mount soldering technologies to affix the connector of Nagata by the contact surfaces onto the respective traces of a printed circuit board thus electrically and mechanically securing the connector to the printed circuit board.

With respect to claim 2; Nagata shows the contact surfaces (21b, 22b) and (26b, 25b) of the spring blades (21, 22, 25, 26) would be arranged in a plane parallel to the circuit board.

2. Claims 3-7 and 15-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nagata (US 6,595,804) as applied to claims 1 and 2 above and further in view of Baffert (US 6,238,218).

With respect to claims 3 and 15; Nagata shows the connector according to claims 1 and 2.

However Nagata does not show the connector within a housing.

Baffert shows a connector (6) for connecting a plug connector to a transmission line on a circuit board (1) the coaxial plug connector (38) having a housing feed-through section (Fig. 1) for a housing (7) surrounding the circuit board (1).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify mounting the connector of Nagata whereby the portion at (12) would serve as a feed-through section as taught by Baffert (Col. 1, lines 32-35) as a means of providing connectivity to a circuit board that occupies a minimal amount of space on the circuit card, thus producing a connector that serves to support the goals and trends toward miniaturization.

With respect to claims 4 and 16; Nagata shows all the spring blades (21, 22, 25, 26) extend in one plane which would be parallel to the circuit board (Fig. 7).

With respect to claims 5 and 17; Nagata shows in that the spring blades of the first pair (21, 22) have only one piece in the region of the contact surface (EACH OF THE SPRING BLADES OF NAGATA ARE SINGLE PIECE CONSTRUCTION).

With respect to claims 6 and 18; Nagata shows the spring blades of a pair (25, 26) are angled away from each other (25d, 26d) at their end facing towards the coaxial plug connector.

With respect to claims 7 and 19; Nagata as modified by Baffert has been discussed above with respect to claim 3.

It was established Baffert shows a housing which contained the circuit board on which the spring blades of the connector having the feed-through section as discussed in claim 3 are mounted, thus the housing carries all the spring blades discussed thus far.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify mounting the connector of Nagata in the manner taught by Baffert for the reasons discussed in claim 3.

3. Claims 8-12 and 19-21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nagata (US 6,595,804) and Baffert (US 6,238,218) as applied to claims 1-7 above and further in view of Jones (US 6,752,658).

However regarding claims 8 and 19; neither Nagata nor Baffert show or teach the details pertaining to the housing containing a connector for a plug connector mounted on a circuit board.

Jones shows a connector (1) mounted to a circuit board (3) contained within a housing (4, 5) wherein the housing is a planar component (Fig. 1).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the connector of Nagata with a housing having a planar component as taught by Jones (Col. 1, lines 59-61) thereby keeping the overall connector structure as simple as possible in order to keep costs as low as possible.

With respect to claims 9 and 20; Nagata as modified by Baffert and Jones has been discussed above with respect to claims 8 and 19.

Jones further shows the housing (4, 5) has at least one peg (48) which extends away from the housing (Fig. 2) for engaging in the circuit board (3).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the connector of Nagata with the housing having a planar component which also has at least one peg which engages the circuit board also taught by Jones (Col. 4, lines 36-42) thereby assuring contact surface alignment prior to soldering thus ensuring more reliable assembly of the connector.

With respect to claims 10, 11 and 21; Nagata as modified by Baffert and Jones has been discussed above with respect to claims 8, 9, 19 and 20.

Jones further shows the peg (48) is designed for engaging in a hole (32) in the circuit board (3), whereby the peg (48) has at least one detent lug (480) which extends in the radial direction in relation to the peg (Fig. 4), beyond the lug outer periphery, the detent lug (480) being arranged on the peg (48) such that the outer periphery of the peg (48) is smaller in the region of the detent lug (480) than the diameter of the hole (32) in the circuit board (3), whereby the outer periphery of the section of the peg (28) protruding into the hole (32) in the circuit board (3) is such that between the outer periphery of the section of the peg and the inner wall of the hole (32) in the circuit board (3), over at least a portion of the outer periphery there is an intermediate space ~~with capillarity for solder~~, such that solder situated on the surface of the circuit board (3) during a soldering procedure penetrates by capillary action into and fills the intermediate space ~~, filling it~~.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the connector of Nagata with the housing having a planar component which also has at least one peg engaging the circuit board as taught by Jones (Col. 4, lines 36-42) wherein the peg would provide space between its peripheral surface and the surface of the hole it occupies providing for the inherent capillary action of solder during SMT of the connector to the circuit board. This would produce an overall more robust assembly.

With respect to claim 12; Nagata as modified by Baffert and Jones has been discussed above with respect to claims 8-11.

Jones further shows the periphery of the peg (Fig. 4) in the longitudinal direction over the whole section situated in the hole (32) in the circuit board includes at least one cut-out (BETWEEN MEMBERS 480).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the connector of Nagata with the housing having a planar component which also has at least one peg having the aforementioned attributes engaging the circuit board as taught by Jones to further support the reasoning discussed above.

Allowable Subject Matter

4. Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 13; allowability resides, at least in part, with the prior art not disclosing, showing or teaching a connector for connecting a plug connector to a circuit board having a metallised hole in the circuit board into which the peg of the connector is accepted in combination with ***ALL*** the remaining limitations of intervening claims 1-12.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Girardi: Telephone number (571) 272-5924.

Monday – Thursday 7 a.m. to 5:30 p.m. (EST)

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Paula Bradley can be reached on (571) 272-2800 ext 33.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VG
Art Unit 2833
April 17, 2007

THO D. TA
PRIMARY EXAMINER